

III. REPORT OF DOMINION ANALYST AND CHIEF INSPECTOR OF EXPLOSIVES.

Dominion Laboratory, Wellington, June, 1917.

HISTORICAL.

With the publication of the present report the Laboratory completes the fiftieth year of its existence. It was established as a branch of the Geological Survey towards the end of 1866, to meet the need for chemical investigation of the many mineral and other substances that were being discovered in New Zealand. A small laboratory was equipped at the rear of the present Museum, and Mr. William Skey, F.C.S., placed in charge. During the thirty-three years that he occupied the position many problems of economic importance to the country, dealing with mining, agriculture, and industry generally, received his consideration. His original papers, published, some in the *Chemical News* and the *Journal of the Chemical Society*, but principally in the *Transactions of the New Zealand Institute* and in Laboratory and other Government reports, cover a wide field of pure and applied science, and constitute a valuable contribution to scientific literature. On his death in 1899 he was succeeded by J. S. MacLaurin, D.Sc., F.C.S.

A new laboratory was built in Sydney Street and opened in 1905.

The passing of the Food and Drugs Act in 1908, and the general recognition by many branches of the Public Service of the advantages of analytical control of stores and supplies, have substantially increased the work and widened the scope and character of the analyses performed.

The administration of the Explosives Act was taken over in 1909.

The Laboratory now undertakes the analytical and consulting chemical work required by all Government Departments except that of Agriculture, controls the importation and sale of explosives throughout the Dominion, and carries out research on New Zealand products and industries as far as its limited staff permits.

STAFF.

One of the Inspectors of Explosives enlisted during the year, and is now abroad with the Expeditionary Force. He is the fourth member of the staff whose services have been accepted since the outbreak of the war. Three other members are shortly to go into camp for training.

WORK.

The war has been directly responsible for a considerable increase in some branches of the work.

The water-supplies of the various military camps have been examined at intervals during the year. The camp foods tested were on the whole satisfactory. Cordials from four of the transports were analysed, and samples of drugs supplied under contract showed no serious departure from the B.P. standard.

The composition of condensed milk from four different shipments was checked for the Military Supplies Purchase Office.

In regard to the other work, analyses have been made to determine the value of 131 consignments of scheelite, representing 268 tons, purchased on behalf of the Imperial Government; also one or two minor investigations have been conducted for the Minister of Munitions.

CUSTOMS.

The Customs Department submitted about the usual number of miscellaneous samples for classification for tariff purposes. Numerous hop-beers, manufactured under Customs license, were also examined.

POLICE.

The work for the Police Department has been heavier than usual. Three hundred and sixty-four samples of liquor, fifty-five samples of medicines, and a great variety of sweets were examined during the year. There were nine cases of suspected poisoning, in one of which morphine was found, in another methylated spirit, and in a third traces of arsenic.

MINES DEPARTMENT.

The Geological Survey forwarded ninety samples, including twenty-six rocks for complete analysis, forty limestones, fourteen coals, and a few phosphatic nodules.

Prospectors' samples for gold and silver disclosed little of value except those from the Waipori district, and in one case only from Takaka.

The presence of molybdenite was determined in a sample of quartz from Upper Takaka, constituting a new locality for this mineral. Tantalum was found, for the first time in New Zealand, in sluicing concentrates from Addison's, Westport.

PUBLIC HEALTH.

The list of foods and foodstuffs examined for the Department of Public Health includes butter, baking-powder, cordials, cream, cream of tartar, coffee, cheese, eggs and egg-yolk, flavouring-essence, flour, honey, jam, margarine, malt flour, milk, pepper, potted meats, sweets, tea, whisky, vinegar. Some of the jams contained excess of apple-pulp. Preservative was found in a cordial and in cream, but most of the samples complied with the regulations.

MILK-SUPPLY.

Samples received during the year cover the most important towns in the Wellington, Taranaki, Hawke's Bay, Gisborne, and Nelson districts. In all 1,108 samples were taken under the Sale of Food and Drugs Act.

Wellington City.—The appointment of a milk inspector by the City Council resulted in 847 samples being taken, as against 338 for last year. Of the 847, twenty-eight were adulterated with water, one to the extent of 21·8 per cent., the average addition being 9 per cent.; fifty-six proved deficient in fat, the worst sample representing 23 per cent. of skimming, the average 8·8 per